# 4.2 AIR QUALITY

## INTRODUCTION

This section addresses air emissions associated with the Land Use Element/Zoning Code Amendments and Mobility Element Update. The analysis provides an overview of applicable regulations, a description of existing conditions, and analysis of potential impacts on air quality and the consistency of the Project with air quality policies within the Great Basin Unified Air Pollution Control District (GBUAPCD)'s Air Quality Management Plan for the Town of Mammoth Lakes. The analysis of Project-generated air emissions focuses on whether the Project would cause an exceedance of an ambient air quality standard or appropriate significance threshold. Air quality technical data utilized in this section is included as Appendix B of this EIR.

## 1. ENVIRONMENTAL SETTING

### a. Regulatory Framework

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The Project Area and vicinity are subject to air quality regulations developed and implemented at the federal, state, and local levels.

#### (1) Federal

The federal Clean Air Act of 1963 was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, the United State Environmental Protection Agency (USEPA) is responsible for implementation of certain portions of the Clean Air Act including mobile source requirements. Other portions of the Clean Air Act, such as stationary source requirements, are implemented by state and local agencies.

The Clean Air Act establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The Clean Air Act also mandates that the state submit and implement a State Implementation Plan for areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the Clean Air Act identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the Clean Air Act which are most applicable to the Project include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions). Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: (1) Ozone($O_3$); (2) Nitrogen Dioxide ($NO_2$); (3) Carbon Monoxide (CO); (4) Sulfur Dioxide ($SO_2$); (5) Particulate Matter 10- microns ($PM_{10}$); and (6) lead (Pb). The NAAQS were amended in July 1997 to include an 8-hour standard for $O_3$ and to adopt a NAAQS for Particulate Matter 2.5-microns ($PM_{2.5}$). The NAAQS were amended in September 2006 to include an established methodology for calculating $PM_{2.5}$ as well as revoking the annual $PM_{10}$ threshold. **Table 4.2-1**, *Ambient Air Quality Standards*, shows the NAAQS for each criteria pollutant.

**Table 4.2-1**

**Ambient Air Quality Standards**

| Pollutant | Average Time | California Standards [a] | | National Standards [b] | | |
|---|---|---|---|---|---|---|
| | | Concentration [c] | Method [d] | Primary [c,e] | Secondary [c,f] | Method [g] |
| $O_3$ [h] | 1 Hour | 0.09 ppm (180 µg/m³) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m³) | | 0.070 ppm (137 µg/m³) | | |
| $NO_2$ [i] | 1 Hour | 0.18 ppm (339 µg/m³) | Gas Phase Chemi-luminescence | 100 ppb (188 µg/m³) | None | Gas Phase Chemi-luminescence |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m³) | | 53 ppb (100 µg/m³) | Same as Primary Standard | |
| CO | 1 Hour | 20 ppm (23 mg/m³) | Non-Dispersive Infrared Photometry (NDIR) | 35 ppm (40 mg/m³) | None | Non-Dispersive Infrared Photometry (NDIR) |
| | 8 Hour | 9.0 ppm (10mg/m³) | | 9 ppm (10 mg/m³) | | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m³) | | — | — | |
| $SO_2$ [j] | 1 Hour | 0.25 ppm (655 µg/m³) | Ultraviolet Fluorescence | 75 ppb (196 µg/m³) | — | Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)[9] |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m³) | |
| | 24 Hour | 0.04 ppm (105 µg/m³) | | 0.14 ppm (for certain areas)[j] | — | |
| | Annual Arithmetic Mean | — | | 0.030 ppm (for certain areas) [j] | — | |
| $PM_{10}$ [k] | 24 Hour | 50 µg/m³ | Gravimetric or Beta Attenuation | 150 µg/m³ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m³ | | — | | |
| $PM_{2.5}$ [k] | 24 Hour | No Separate State Standard | | 35 µg/m³ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 µg/m³ | Gravimetric or Beta Attenuation | 12.0 µg/m³ [k] | 15 µg/m³ | |
| Lead [l,m] | 30 Day Average | 1.5 µg/m³ | Atomic Absorption | — | — | High Volume Sampler and Atomic Absorption |
| | Calendar Quarter | — | | 1.5 µg/m³ (for certain areas)[m] | Same as Primary Standard | |
| | Rolling 3-Month Average [m] | -- | | 0.15 µg/m³ | | |
| Visibility Reducing Particles [n] | 8 Hour | Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. | | **No Federal Standards** | | |
| Sulfates ($SO_4$) | 24 Hour | 25 µg/m³ | Ion Chromatography | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m³) | Ultraviolet Fluorescence | | | |
| Vinyl Chloride [l] | 24 Hour | 0.01 ppm (26 µg/m³) | Gas Chromatography | | | |

**Table 4.2-1 (Continued)**

**Ambient Air Quality Standards**

| Pollutant | Average Time | California Standards [a] | | National Standards [b] | | |
|---|---|---|---|---|---|---|
| | | Concentration [c] | Method [d] | Primary [c,e] | Secondary [c,f] | Method [g] |

[a] *California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter ($PM_{10}$, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*

[b] *National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For $PM_{10}$, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms/per cubic meter ($\mu g/m^3$) is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.*

[c] *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*

[d] *Any equivalent procedure which can be shown to the satisfaction of the California Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.*

[e] *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.*

[f] *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*

[g] *Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.*

[h] *On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.*

[i] *To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.*

[j] *On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.*

[k] *On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$.*

[l] *The California Air Resources Board has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

[m] *The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.*

[n] *In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.*

*Source: California Air Resources Board, Ambient Air Quality Standards (10/1/15), http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed January 2016.*

Title II of the Clean Air Act pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for $NO_X$ emissions have lowered substantially and the specification requirements for cleaner burning gasoline are more stringent.

### (2) State of California

#### (a) California Clean Air Act

The California Clean Air Act , signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS are set at levels that protect human health, particularly that of infants and children, and incorporate an adequate margin of safety.[1] Table 4.2-1 shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the State. As shown in Table 4.2-1, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants. In general, the California standards are more health protective than the corresponding NAAQS. In addition, the California Air Resources Board (CARB) has established standards for other pollutants recognized by the State, such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

#### (b) California Air Resources Board Air Quality and Land Use Handbook

The CARB published the *Air Quality and Land Use Handbook* in April 2005 to serve as a general guide for considering impacts to sensitive receptors from facilities that emit toxic air contaminant (TAC) emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of CARB's recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day; (2) avoid siting sensitive receptors within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater), or within 50 feet of a typical gas dispensing facility; (3) avoid siting sensitive receptors within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week); and (4) avoid siting sensitive receptors within 300 feet of any dry cleaning operation using perchloroethylene and within 500 feet of operations with two or more machines.

#### (c) California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter (DPM) and other air contaminants.[2]

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[1] *California Air Resources Board, "Final Report – Adequacy of California Ambient Air Quality Standards," http://www.arb.ca.gov/research/aaqs/caaqs/ad-aaqs/ad-aaqs.htm. Accessed July 2015. The Children's Environmental Health Protection Act (Senate Bill 25, Escutia, 1999) required CARB to review the standards to determine if they "adequately protect public health, including infants and children, with an adequate margin of safety."*

[2] *Calif. Code of Regulations, Title 13, Sec. 2485.*

The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. In general, the measure prohibits idling for more than five minutes at any given time.

In 2008, CARB approved the Truck and Bus regulation to reduce $NO_X$, $PM_{10}$, and $PM_{2.5}$ emissions from existing diesel vehicles operating in California (CARB Rules Chapter 1, Section 2025, subsection (h)).[3] The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. For the largest trucks in the fleet, those with a gross vehicle weight rating greater than 26,000 pounds, there are two methods to comply with the requirements. The first way is for the fleet owner to retrofit or replace engines, starting with the oldest engine model year, to meet 2010 engine standards, or better. This is phased over 8 years, starting in 2015 and would be fully implemented by 2023, meaning that all trucks operating in the State subject to this option would meet or exceed the 2010 engine emission standards for $NO_X$ and PM by 2023. The second option, if chosen, requires fleet owners, starting in 2012, to retrofit a portion of their fleet with diesel particulate filters achieving at least 85 percent removal efficiency, so that by January 1, 2016 their entire fleet is equipped with diesel particulate filters. However, diesel particulate filters do not typically lower $NO_X$ emissions. Thus, fleet owners choosing the second option must still comply with the 2010 engine emission standards for their trucks and busses by 2020.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment such of greater than 25 horsepower as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models. Implementation is staggered based on fleet size (which is the total of all off-road horsepower under common ownership or control), with the largest fleets to begin compliance by January 1, 2014 (CARB Rules Chapter 9, Section 2449).[4] Each fleet must demonstrate compliance through one of two methods. The first option is to calculate and maintain fleet average emissions targets, which encourages the retirement or repowering of older equipment and rewards the introduction of newer cleaner units into the fleet. The second option is to meet the Best Available Control Technology (BACT) requirements by turning over or installing Verified Diesel Emission Control Strategies (e.g., engine retrofits) on a certain percentage of its total fleet horsepower. The compliance schedule requires that BACT turn overs or retrofits be fully implemented by 2023 in all equipment in large and medium fleets and across 100 percent of small fleets by 2028.

### (d) Title 24, Building Standards Code and CALGreen Code

The California Energy Commission first adopted the Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels

[3] *Final Regulation Order, Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants from In-Use On-Road Diesel-Fueled Vehicles, http://www.arb.ca.gov/msprog/onrdiesel/documents/TBFinalReg.pdf. Accessed July 2015.*

[4] *Final Regulation Order, Regulation for In-Use Off-Road Diesel-Fueled Fleets, http://www.arb.ca.gov/regact/2010/offroadlsi10/finaloffroadreg.pdf. Accessed July 2015.*

would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code. The purpose of the California Green Building Standards Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."[5] The California Green Building Standards Code is not intended to substitute for or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission. The California Green Building Standards Code is mandatory for all new buildings constructed in the state and establishes mandatory measures that include energy efficiency, water conservation, material conservation, planning and design and overall environmental quality. The California Green Building Standards Code was most recently updated in 2013; the new measures took effect on July 1, 2014.

### (3) Great Basin Valley Air Basin

#### (a) Great Basin Unified Air Pollution Control District

The GBUAPCD, which covers the whole Great Basin Valley Air Basin (GBVAB), has jurisdiction over an area of approximately 13,975 square miles. This area includes all of Inyo, Mono and Alpine counties. The GBUAPCD was formed in 1974 when Inyo, Mono and Alpine Counties formed a joint powers agreement with the purpose of meeting and enforcing applicable Federal, State and local air quality regulations. While air quality in this area has improved, the GBUAPCD requires continued diligence to meet air quality standards.

Effective January 23, 2005, the Mono County portion of the GBVAB is designated as non-attainment for the state $O_3$ and $PM_{10}$ ambient air quality standards. Although Mono County is categorized as nonattainment of the state $O_3$ standard, an ozone implementation plan for attaining the ozone standard in Mono County is not required pursuant to the CARB *Ozone Transport: 2001 Review*, which states that "transport from the central portion of the [San Joaquin] Valley is responsible for ozone violations in Mammoth Lakes."[6]

With respect to $PM_{10}$, the GBUAPCD adopted the Air Quality Management Plan (AQMP) for the Town of Mammoth Lakes in November 1990, which identified $PM_{10}$ sources and mitigation strategies intended to attain the NAAQS. The AQMP identified emissions from wood-burning stoves and fireplaces and traffic-related road dust and cinders as the primary causes leading to exceedances of the federal $PM_{10}$ standard in the winter, exacerbated by the substantial influx of visitors to the Mammoth Lakes area during the ski season. The combination of periods of meteorological stagnation and increased visitation to the ski resorts result in violations of $PM_{10}$ standards. The AQMP included a number of control strategies, including a ban on new wood-burning devices, requirements to retrofit existing wood-burning devices, and a Town-wide limit on vehicle miles traveled (VMT). After adoption of the AQMP, monitored air pollution levels dropped

[5] *California Building Standards Commission, Guide to the 2013 California Green Building Standards Code, Residential (2013).*

[6] *California Air Resources Board, Ozone Transport: 2001 Review, (April 2001) 45.*

substantially in Mammoth Lakes. Since 1993, the Mammoth Lakes planning area has not exceeded the federal 24-hour $PM_{10}$ NAAQS. The GBUAPCD adopted the 2014 update to the AQMP, which describes the improved air quality conditions in the Town of Mammoth Lakes. The update also incorporates revisions to GBUAPCD rules, including updating the Town-wide VMT limit from 106,600 to 179,708 miles per day, and a request for redesignation of Mammoth Lakes as attainment for the federal $PM_{10}$ standard. The USEPA approved the redesignation request in October 2015.

The GBUAPCD utilizes a permitting process to regulate emissions. The following list includes some of the rules and regulations that may apply to the Project:

- GBUAPCD Rule 200-A and 200-B. Permits Required: Before any individual builds or operates anything that may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants, such person must obtain a written authority to construct and permit to operate from an Air Pollution Control Officer.
- GBUAPCD Rules 401 and 402. Fugitive Dust and Nuisance: Rule 401 requires that airborne particles remain at their place of origin under normal wind conditions. Proper mitigation techniques approved by the GBUAPCD must be implemented to ensure that fugitive dust is contained. This does not apply to dust emissions discharged through a stack or other point source. Rule 402 states that any air discharge that may cause injury or detriment, nuisance or annoyance, or damage to any public property or considerable number of people is regulated. This rule discusses the health and safety issues that may interfere with public and private areas surrounding the site.
- GBUAPCD Rules 404-A and Rule 404-B. Particulate Matter and Oxides of Nitrogen: Rule 404-A states that a person shall not discharge from any source whatsoever, particulate matter in excess of 0.3 grains per standard dry cubic foot of exhaust gas. Rule 404-B states that a person shall not discharge from fuel burning equipment having a maximum heat input rate of more than 1.5 billion BTU per hour (gross), flue gas having a concentration of nitrogen oxides calculated as Nitrogen Dioxide ($NO_2$) in parts per million of flue gas by volume at 3 percent oxygen: 125 ppm with natural gas fuel, or 225 ppm with liquid or solid fuel. Additionally, a person shall not discharge from sources other than combustion sources, nitrogen oxides, calculated as nitrogen dioxide, 250 parts per million (ppm) by volume.
- GBUAPCD Rule 431. PM Reduction Control Measures: Requirements include vacuum street sweeping of wood stove cinders, requires VMT reduction measures for new developments, and limits peak VMT in the Town to 179,708 VMT.

### (b) Regional Comprehensive Plan

The GBVAB lies outside of a metropolitan planning organization (MPO). It is identified as an Isolated Rural area, meaning that its emissions are not part of an emissions analysis of any MPO's transportation plan or Transportation Improvement Program. Therefore, the Town of Mammoth Lakes is not subject to a Regional Comprehensive Plan to guide growth and transportation issues in the area.

### (4) Town of Mammoth Lakes

#### (a) Mammoth Lakes Plans and Policies

The Mammoth Lakes General Plan, last updated in 2007, is designed to promote the public health, safety and general welfare of the community. The Plan is a comprehensive, long term and an internally consistent document that sets forth goals and policies to govern decisions of the Town with respect to the community's future. The Air Quality Element includes goals and policies related to attaining the air quality standards and reducing air pollution. Refer to Subsection 4.2.2.c for a list of these goals and policies.

#### (b) Mammoth Lakes Municipal Code

Chapter 8.30 of the Municipal Code (Town Particulate Emissions Regulations) requires the Town to include a limit of 179,708 VMT in its review of proposed development projects, incorporate street sweeping measures, and implement restrictions on wood-burning stoves and fireplaces, and other measures consistent with applicable GBUAPCD Rule 431 listed above.

## b. Existing Conditions

### (1) Regional Context

The Project Area is located in the GBVAB, which consists of an area of approximately 13,975 square miles and includes all of Inyo, Mono and Alpine counties. **Table 4.2-2**, *Great Basin Valleys Air Basin Attainment Status (Mammoth Lake Planning Area)*, provides a summary of the GBVAB's attainment status with respect to federal and state standards. The GBVAB is designated as having attained state standards for all pollutants except ozone and respirable particulate matter ($PM_{10}$) (24-hour average) and having attained all federal standards. Therefore, discussion of impacts for this Project will focus on those pollutants. According to the *2014 Update Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes*, the Town of Mammoth Lakes was previously designated as non-attainment for the federal $PM_{10}$ standards; however, ambient levels have not exceeded the national $PM_{10}$ standards since 1993 and the GBUAPCD submitted a redesignation request to CARB and the USEPA.[7] CARB approved the redesignation request in September 2014 and the USEPA approved the redesignation request in October 2015.

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in the prevalent air quality. The following pollutants are regulated by the USEPA and, therefore, are subject to emission reduction measures adopted by federal, state and other regulatory agencies. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards, or criteria, which have been adopted for them. The NAAQS and CAAQS for each of the monitored pollutants are summarized in Table 4.2-1. The NAAQS and CAAQS have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety; and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. A brief description of the health effects of these criteria air pollutants are provided below.

[7] *Great Basin Unified Air Pollution Control District, 2014 Update Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, May 5, 2014.*

**Table 4.2-2**

**Great Basin Valley Air Basin Attainment Status (Mammoth Lakes Planning Area)**

| Pollutant | National Standards | California Standards |
|---|---|---|
| Ozone | Attainment | Non-attainment |
| Nitrogen Dioxide | Attainment | Attainment |
| Carbon Monoxide | Attainment | Attainment |
| Sulfur Dioxide | Attainment | Attainment |
| $PM_{10}$ | Attainment | Non-attainment |
| $PM_{2.5}$ | Attainment | Attainment |
| Lead | Attainment | Attainment |
| Visibility Reducing Particles | N/A | Attainment |
| Sulfates | N/A | Attainment |
| Hydrogen Sulfide | N/A | Attainment |
| Vinyl Chloride | N/A | N/A [a] |

*N/A = not applicable*

[a] *In 1990 the California Air Resources Board identified vinyl chloride as a toxic air contaminant and determined that it does not have an identifiable threshold. Therefore, the California Air Resources Board does not monitor or make status designations for this pollutant.*

*Source: United States Environmental Protection Agency, EPA Region 9 Air Quality Maps, http://www.epa.gov/region9/air/maps/. Accessed April 2016; California Air Resources Board, Area Designations Maps/State and National, http://www.arb.ca.gov/desig/adm/adm.htm. Accessed April 2016.*

**$O_3$:** Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides ($NO_X$) under favorable meteorological conditions such as high temperature and stagnation episodes. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. An elevated level of ozone irritates the lungs and breathing passages, causing coughing, and pain in the chest and throat thereby increasing susceptibility to respiratory infections and reducing the ability to exercise. Effects are more severe in people with asthma and other respiratory ailments. Long-term exposure may lead to scarring of lung tissue and may lower the lung efficiency.

**VOCs.** VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Some VOCs are also classified by the State as toxic air contaminants. These are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons, as are architectural coatings. Emissions of VOCs themselves are not "criteria" pollutants; however, they contribute with $NO_X$ to formation of $O_3$ and are regulated as $O_3$ precursor emissions.

**$NO_2$ and $NO_X$:** $NO_X$ is a term that refers to a group of compounds containing nitrogen and oxygen. The primary compounds of air quality concern include $NO_2$ and nitric oxide (NO), which can quickly oxidize in the atmosphere to form $NO_2$. Ambient air quality standards have been promulgated for $NO_2$, which is a reddish-brown, reactive gas. The principle form of $NO_X$ produced by combustion is NO, but NO reacts quickly in the atmosphere to form $NO_2$, creating the mixture of NO and $NO_2$ referred to as $NO_X$. Major sources of $NO_X$ emissions include power plants, large industrial facilities, and motor vehicles. Emissions of $NO_X$ are a precursor to the formation of ground-level ozone. $NO_2$ can potentially irritate the nose and throat, aggravate lung and heart problems, and may increase susceptibility to respiratory infections, especially in people with asthma. According to the California Air Resources Board (CARB), "$NO_2$ is an oxidizing gas capable of

damaging cells lining the respiratory tract. Exposure to $NO_2$ along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to $NO_2$ above the level of the current state air quality standard. Clinical studies of human subjects suggest that $NO_2$ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children."[8] $NO_2$ also contributes to the formation of $PM_{10}$. The terms "$NO_X$" and "$NO_2$" are sometimes used interchangeably. However, the term "$NO_X$" is primarily used when discussing emissions, usually from combustion-related activities. The term "$NO_2$" is primarily used when discussing ambient air quality standards. More specifically, $NO_2$ is regulated as a criteria air pollutant under the Clean Air Act and subject to the ambient air quality standards, whereas $NO_X$ and NO are not. In cases where the thresholds of significance or impact analyses are discussed in the context of $NO_X$ emissions, it is based on the conservative assumption that all Project-related $NO_X$ emissions would oxidize in the atmosphere to form $NO_2$.

**CO:** Carbon monoxide is primarily emitted from combustion processes and motor vehicles because of incomplete combustion of fuel. Elevated concentrations of CO weaken the heart's contractions and lower the amount of oxygen carried by the blood. It is especially dangerous for people with chronic heart disease. Inhalation of CO can cause nausea, dizziness, and headaches at moderate concentrations and can be fatal at high concentrations.

**$SO_2$:** Major sources of $SO_2$ include power plants, large industrial facilities, diesel vehicles, and oil-burning residential heaters. Emissions of sulfur dioxide aggravate lung diseases, especially bronchitis. It also constricts the breathing passages, especially in asthmatics and people involved in moderate to heavy exercise. Sulfur dioxide potentially causes wheezing, shortness of breath, and coughing. High levels of particulate appear to worsen the effect of sulfur dioxide, and long-term exposures to both pollutants leads to higher rates of respiratory illness.

**$PM_{10}$ and $PM_{2.5}$:** The human body naturally prevents the entry of larger particles into the body. However, small particles including fugitive dust, with an aerodynamic diameter equal to or less than ten microns ($PM_{10}$) and even smaller particles with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$), can enter the body and are trapped in the nose, throat, and upper respiratory tract. These small particulates could potentially aggravate existing heart and lung diseases, change the body's defenses against inhaled materials, and damage lung tissue. Some types of particulate could become toxic after inhalation due to the presence of certain chemicals and their reaction with internal body fluids. The elderly, children, and those with chronic lung or heart disease are most sensitive to $PM_{10}$ and $PM_{2.5}$. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses.[9] Lung impairment can persist for two to three weeks after exposure to high levels of particulate matter.

"Fugitive dust" is atmospheric dust resulting from both natural and anthropogenic disturbance of soil and other granular material. Fugitive dust particles are comprised mainly of soil minerals (i.e. oxides of silicon,

[8] *California Air Resources Board, "Nitrogen Dioxide – Overview," http://www.arb.ca.gov/research/aaqs/caaqs/no2-1/no2-1.htm. Accessed January 2015.*

[9] *California Air Resources Board, "Particulate Matter – Overview," http://www.arb.ca.gov/research/aaqs/caaqs/pm/pm.htm. Accessed January 2015.*

aluminum, calcium, and iron), but can also consist of sea salt, pollen, spores, etc. $PM_{10}$ is predominately comprised of windblown dust or other operations involving solid particulate materials. $PM_{2.5}$ is more likely the result of fuel combustion and photochemical reactions. $PM_{2.5}$ is both directly emitted and formed via chemical reactions in the atmosphere from precursor pollutants such as $NO_X$, $SO_X$, and ammonia. However, most fugitive dust particles are larger than $PM_{10}$ particulates and thus would not comprise either $PM_{10}$ or $PM_{2.5}$.

**Pb:** Lead is emitted from industrial facilities and from the sanding or removal of old lead-based paint. Smelting or processing the metal is the primary source of lead emissions, which is primarily a regional pollutant. Lead affects the brain and other parts of the body's nervous system. Exposure to lead in very young children impairs the development of the nervous system, kidneys, and blood forming processes in the body.

## (2) Local Area Conditions

### (a) Meteorology and Pollutant Levels

The Project Area is located in the Town of Mammoth Lakes in Mono County. Located on the eastern slope of the Sierra Nevada Mountains, the Town has a dry climate with clear skies, excellent visibility, hot summers, and wide fluctuations in daily temperatures. The average minimum temperature is in the upper 20s (degrees Fahrenheit), while the average maximum temperature is in the mid- to high 50s. Most of the precipitation in this area (approximately 70 percent) occurs between November and February. Spring is the windiest season, with fast-moving northerly weather fronts. During the day, southerly winds result from the strong solar heating of the mountain slopes, causing upslope circulation. Summer winds are northerly at night as a result of cool air draining from higher to lower elevations. The mean annual wind speed in Mammoth Lakes is less than 11 miles per hour (mph).

The extent and severity of the air pollution problem in the GBVAB is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). The Mono County portion of the GBVAB has a non-attainment status for ozone (State standards only); however, as discussed previously, non-attainment of ozone is associated with the effect of transported pollution from outside of Mono County, rather than local generation of ozone or ozone precursors. All of the GBVAB is designated non-attainment for the $PM_{10}$ State standard.

Although Mono County is categorized as non-attainment for the State ozone standard, there is no ozone implementation plan for attainment in Mono County, nor is one required under State law. As outlined in the 2001 CARB Ozone Transport Review, the CARB classifies the contribution of transported pollution from one air basin to another to be either overwhelming, significant, inconsequential, or some combination of the three. The CARB Ozone Transport Review is a statewide assessment of ozone transport between air basins. According to the CARB, ozone levels would improve in the air basin only when substantial mitigation measures are more fully implemented in upwind air basins. Local sources are not considered to have a considerable impact on ambient levels due to the climactic patterns of the eastern slopes of the Sierra Nevada Mountains.

### (b) Existing Pollutant Levels at Nearby Monitoring Stations

Air quality is monitored by the GBUAPCD at a number of locations throughout the GBVAB. Currently, there are 19 monitoring sites in the GBVAB. The monitoring station most representative of the Project Area is the Mammoth Lakes-Gateway Home Center monitoring station, located on Highway 203 and Old Mammoth Road.. The station only monitors ambient concentrations of $PM_{10}$. Although Mono County is designated as non-attainment for the state ozone standard, there has been no ozone monitoring in the County since 2002. According to the CARB *Ozone Transport: 2001 Review*, "transport from the central portion of the [San Joaquin] Valley is responsible for ozone violations in Mammoth Lakes."[10] The most recent data available from Mammoth Lakes-Gateway Home Center monitoring station encompasses the years 2010 to 2014. The data shown in **Table 4.2-3**, *Pollutant Standards and Ambient Air Quality Data from Representative Monitoring Stations*, indicate the $PM_{10}$ pollutant trends for the Project Area.

**Table 4.2-3**

**Pollutant Standards and Ambient Air Quality Data from Representative Monitoring Stations**

| Pollutant Standard and Data | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| **$PM_{10}$ (24 hour)** | | | | | |
| Maximum Concentration (µg/m$^3$) – Federal [a] | 101 | 56 | 133 | 130 | 84 |
| Maximum Concentration (µg/m$^3$) – State [b] | 105 | 42 | 82 | 38 | 51 |
| Measured Days > NAAQS (150 µg/m$^3$) [c] | 0 | 0 | 0 | 0 | 0 |
| Measured Days > CAAQS (50 µg/m$^3$) [c] | 5 | 0 | 6 | 0 | 1 |

*ppm = parts per million; µg/m$^3$ = micrograms per cubic meter*

[a] *Federal data excludes exceptional events.*

[b] *State data may include exceptional events. State and national statistics may differ for the following reasons: (1) State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. (2) State statistics for 1998 and later are based on local conditions. National statistics are based on standard conditions. (3) State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.*

[c] *Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard.*

*Source: California Air Resources Board, Air Quality Data Statistics, http://www.arb.ca.gov/adam/. Accessed April 2016; U.S. Environmental Protection Agency, AirData, http://www.epa.gov/airdata/ad_rep_mon.html. Accessed April 2016. Data excludes exceptional events.*

### (c) Existing Emissions

The Town of Mammoth Lakes is currently developed with a mix of residential units, hotel/lodging, commercial services, including outdoor and recreational uses, for residents and visitors to the Town, and limited industrial uses. The existing uses include retail, restaurants, cinema, equipment rental, storage, laundromat, gas stations, banks, pet supplies, offices, residences, churches, day care, visitor accommodations, and some construction related uses. The existing development within the Project Area and Townwide is provided in Chapter 2.0, *Project Description*. The Transportation Impact Analysis for the Project[11] provides an estimate of the existing VMT for the Town of Mammoth Lakes. According to the Transportation Impact

[10] *California Air Resources Board, Ozone Transport: 2001 Review, (April 2001) 45.*

[11] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, 2016.*

Analysis the existing VMT estimates for the Town roadways included in the modeling analysis is 152,844 VMT on a peak day or approximately 41.3 million VMT per year.

Sources of emissions in the Project Area consist primarily of energy, water, and solid waste sources from commercial uses within the approximately 122-acre commercially designated area that would be covered by the proposed Land Use Element/Zoning Code Amendments and mobile sources associated with vehicle travel along Town roadways that would be affected by both the proposed Land Use Element/Zoning Code Amendments and Mobility Element Update. Under CEQA, the baseline environmental setting is established as the time that environmental assessment commences. Therefore, the existing Project Area emissions serves as the baseline and the operational air quality impacts for the Project are assessed based on the incremental change in emissions from future development resulting from the proposed Land Use Element/Zoning Code Amendments and improvements occurring under the Mobility Element Update.

#### (d) Sensitive Receptors

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases) are considered more sensitive to the potential effects of air pollution than others. Sensitive receptors in the Town of Mammoth Lakes include: residences, schools, hospitals, and day care facilities.

## 2. METHODOLOGY AND THRESHOLDS

## a. Methodology

The evaluation of potential impacts to air quality that may result from the construction and long-term operations of the Project is conducted as follows:

#### (1) Consistency with Air Quality Plan

The GBUAPCD's 2014 update to the AQMP contains a comprehensive list of maintenance measures to ensure that the region continues to meet the NAAQS. Projects that are consistent with the assumptions used in the AQMP do not interfere with attainment because the growth is included in the projections utilized in the formulation of the AQMP. Thus, projects, uses, and activities that are consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed project-specific emissions thresholds. The Project is assessed based on its consistency with applicable AQMP measures.

With regard to $PM_{10}$, the AQMP contains pollution control strategies directed at reducing emissions and maintaining attainment of the NAAQS and includes a Town-wide limit of 179,708 VMT per day to ensure $PM_{10}$ emissions from vehicle exhaust and re-suspended road dust and cinders would not cause an exceedance of the federal 24 hour $PM_{10}$ standard. Therefore, a consistency analysis is performed for the Project to assess compliance with the federal 24-hour $PM_{10}$ standard.

#### (2) Construction Impacts

Construction activity that would occur as a result of the Land Use Element/Zoning Code Amendments and Mobility Element Update has the potential to generate emissions through the use of heavy-duty construction

equipment and through vehicle trips generated from construction workers traveling to and from construction sites. In addition, fugitive dust emissions would result from grading, soil movement and construction activities and evaporative emissions would occur from the application of architectural coatings and the laying of asphalt pavement.

Specific project-level developments are not proposed as part of this Project. As a result, specific project-level information, such as construction schedules and import and export soil quantities, are not known and it is not possible to quantify the emissions associated with project-level construction. For the purposes of conducting a programmatic assessment of the Project, construction-related air quality impacts are qualitatively assessed by evaluating consistency with applicable CARB and GBUAPCD measures to reduce construction-related emissions from the combustion of fossil fuels and from fugitive dust. The analysis also qualitatively assesses consistency with construction measures in the AQMP.

### (3) Operational Impacts

The analysis of a project's impact on regional air quality during long-term project operations typically considers emissions from mobile sources and stationary area sources. Mobile source emissions are generated from vehicle trips and include exhaust emissions as well as fugitive dust emissions from tire wear, brake wear, and re-suspended road dust and cinders. Area source emissions are generated from the combustion of natural gas or wood (for hot water, heat, or cooking) or other fossil fuel (boilers, landscaping equipment, etc.), and use of consumer products that contain volatiles and solvents.

The Project's change to a maximum of 2.0 FAR with no cap on the density of units or rooms could potentially increase the amount of development in the commercially designated areas compared to existing conditions. The potential increase in commercial uses would result in increased operational emissions from mobile source and area source emissions. Operational air quality impacts are assessed based on the incremental increase in emissions compared to the existing baseline conditions.

The incremental change in operational emissions are estimated using CARB's updated version of the on-road vehicle emissions factor (EMFAC) model and the California Emissions Estimator Model (CalEEMod) software. Mobile source emissions are estimated based on CARB's updated version of the on-road vehicle emissions factor (EMFAC) model. The most recent version is EMFAC2014, which "represents ARB's current understanding of motor vehicle travel activities and their associated emission levels."[12] Mobile source emissions are based on the VMT estimates provided in the Transportation Impact Analysis for the Project.[13] The estimated VMT takes into account trip reductions based on applicable physical and operational Project characteristics including internal capture from co-locating commercial and residential uses in close proximity. The emission factors from EMFAC2014 are applied to the VMT to obtain mobile source emissions. Emissions from re-suspended road dust and cinders are calculated outside of CalEEMod consistent with the methodology used in the AQMP since the model does not adequately account for cinders.

[12] *California Air Resources Board, Mobile Source Emissions Inventory, http://www.arb.ca.gov/msei/categories.htm#emfac2014. Accessed November 2015. "USEPA approval is expected by the end of 2015. USEPA will provide a transition period during which either version may be used. Therefore, in anticipation of USEPA approval, use of EMFAC2014 before the end of the year is appropriate."*

[13] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, 2016.*

CalEEMod, which is an emissions inventory model developed by CARB in consultation with the air quality management districts and air pollution control districts in the state, was used to forecast the daily regional emissions from stationary area sources that would occur during long-term Project operations. Area source emissions are based on natural gas (building heating and water heaters), landscaping equipment, and consumer product usage (including paints) rates provided in CalEEMod. Natural gas usage factors for the Project land uses are calculated within CalEEMod using the CEC's CEUS data set.[14] This data set provides energy intensities of different land uses throughout the state and different climate zones. However, since the data from the CEUS is from 2002, correction factors are incorporated to account for compliance with the Title 24 Building Standards Code.

Operational air quality impacts are assessed based on the incremental change in emissions compared to baseline conditions. Under CEQA, the baseline environmental setting is established as the time that environmental assessment commences. Therefore, operational air quality impacts are assessed based on the net increase from full buildout of new development under the Project (Land Use Element/Zoning Code Amendments and Mobility Element Update).

Emissions of CO are produced in greatest quantities from motor vehicle combustion and are usually concentrated at or near ground level because they do not readily disperse into the atmosphere, particularly under cool, stable (i.e., low or no wind) atmospheric conditions. Localized areas where ambient concentrations exceed state and/or federal standards are termed CO hotspots. The potential for the Project to cause or contribute to the formation of off-site CO hotspots are evaluated using data from the Transportation Impact Analysis for the Project.[15] In traffic studies, the term "level of service" (LOS) describes traffic performance at intersections or along roadway segments, and is generally expressed as a letter grade (A through F, with an A grade meaning the freest-flowing traffic). Traffic researchers and planning agencies generally assign LOS ratings to intersections based on the ratio of traffic volume (or demand) to capacity (V/C). Lower V/C ratios correspond to better performance (freer-flowing traffic). Quantitative analyses is performed for those intersections predicted to experience a substantial decrease in LOS or increase in V/C at full buildout of the Project. If intersections would experience a substantial decrease in LOS or increase in V/C, the potential for the intersection to cause or contribute to a CO hotspot is based on the intersection traffic volumes and previous CO hotspot analyses conducted at congested intersections.

### (4) Toxic Air Contaminants

The analysis of potential TAC impacts is based on TAC emissions from the Project impacting off-site sensitive receptors. The Project does not result in a long-term increase in the use of TAC-containing products (fuels, maintenance products, etc.) or the introduction of sensitive receptors near to existing TAC sources. Therefore, quantitative analysis of potential TAC impacts from the Project is not warranted and impacts are assessed qualitatively based on land use compatibility guidelines for sensitive uses and common sources of TAC emissions.

[14] *California Energy Commission, California Commercial End-Use Survey, http://capabilities.itron.com/CeusWeb/Chart.aspx. Accessed December 2013.*

[15] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

## b. Thresholds of Significance

For purposes of this EIR, the Town of Mammoth Lakes has utilized the checklist questions in Appendix G of the *CEQA Guidelines* as thresholds of significance to determine whether a project would have a significant environmental impact regarding air quality. Based on applicable Project components and Appendix G questions, the Project would result in a significant impact with regard to traffic if the Project would:

**AIR-1:** Conflict with or obstruct implementation of the applicable air quality plan.

**AIR-2:** Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

**AIR-3:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

**AIR-4:** Expose sensitive receptors to substantial pollutant concentrations.

Neither the Town of Mammoth Lakes nor the GBUAPCD have established numerical air quality significance thresholds for quantitatively determining air quality impacts in accordance with the criteria listed above. CEQA allows Lead Agencies to rely on standards or thresholds promulgated by other agencies. Projects in the GBVAB have previously used the numerical standards of the Mojave Desert Air Quality Management District (MDAQMD) in prior CEQA reviews (such as the Rock Creek Canyon Specific Plan EIR, Mono County, July 2010). Because the air quality and pollutant attainment status in portions of the Mojave Desert Air Basin (MDAB) are similar to those of the GBVAB, the numerical thresholds set for the MDAB by the MDAQMD are considered adequate to serve as significance thresholds for the Project. The significance criteria discussed below are currently recommended to translate the State *CEQA Guidelines* thresholds into numerical values or performance standards. Based on criteria set forth in the *MDAQMD CEQA and Federal Conformity Guidelines*, the Project would have a significant impact with regard to operational emissions under threshold AIR-2 if the following would occur:

- Operational emissions from both direct and indirect sources would exceed any of the following prescribed threshold levels: (1) 137 pounds per day for VOC; (2) 137 pounds a day for $NO_X$; (3) 550 pounds per day for CO; (4) 137 pounds per day for $SO_2$; (5) 82 pounds per day for $PM_{10}$; and (6) 82 pounds per day for $PM_{2.5}$.[16]

Appendix G issues pertaining to odors were determined to have less than significant impacts in the Initial Study and are, thus, not evaluated further in this analysis. Odors from construction activities would be temporary and short-lived and would not be noticeable beyond the immediate vicinity. Long-term odors are typically associated with industrial uses, such as sewage treatment facilities and landfills and therefore, would not occur. Components under the proposed Land Use Element/Zoning Code Amendments that would

[16] *Mojave Desert Air Quality Management District, California Environmental Quality Act (CEQA) and Federal Conformity Guidelines, February 2009, http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=1806. Accessed August 2015.*

not directly affect air quality are the changes in the commercially designated land use to match existing commercial zoning and deleting Land Use Element CBIZ and TDR policies. As a result, no further analysis of odors is required.

## c. Applicable General Plan Goals/Policies and Adopted Mitigation Measures

The Mammoth Lakes General Plan, last updated in 2007, is designed to promote the public health, safety and general welfare of the community. The Plan is a comprehensive, long term and an internally consistent document that sets forth goals and policies to govern decisions of the Town with respect to the community's future. The air quality goals and policies applicable to the Project include:

### (1) General Plan

#### (a) Air Quality

**GOAL R.10:** Protect health of community residents by assuring that the town of Mammoth Lakes remains in compliance with or improves compliance with air quality standards.

- **Policy R.10.A:** Support regional air quality improvement efforts.
- **Policy R.10.D:** Mitigate impacts on air quality resulting from development through design, participation in Town air pollution reduction programs, and/or other measures that address compliance with adopted air quality standards.
- **Policy R.10.E:** The Town of Mammoth Lakes will strive to attain and maintain the National Ambient Air Quality Standard (NAAQS) for $PM_{10}$.
- **Action R.10.E.2:** The Town will continue to require project level environmental reviews (EIR's and Negative Declarations) to address the incremental increase in $PM_{10}$ levels from the project(s).
- **Action R.10.E.3:** In the event that the project level reviews show that the Town is likely to exceed the NAAQS, permits will not be issued until mitigation is developed that demonstrate compliance with the NAAQS.
- **Policy R.10.G:** Reduce air pollutants during construction through implementation of Best Management Practices (BMPs).

### (2) Mitigation Monitoring and Reporting Program

The Mitigation Monitoring and Reporting Program (MMRP) for the Town of Mammoth Lakes General Plan includes mitigation measures applicable to air quality. Since these are adopted measures, for purposes of this EIR, the following measures are applicable to the Project:

**GPMM 4.2-1:** The Town shall limit the total Town VMT to the level specified in Municipal Code Section 8.30.110. The Town shall require a VMT analysis for specific projects in those cases where the project would result in 500 daily vehicle trips for incorporation into the AQMP model. VMT analyses shall be conducted early in the environmental review process so that mitigation may be included in the project design.

**GPMM 4.2-2:** The Town shall evaluate $PM_{10}$ levels on an annual basis using the AQMP model. The Town shall conduct surveys, as needed, to establish an accurate inventory of wood burning and pellet burning appliances, to validate assumptions regarding annual and daily wood and pellet usage patterns, to determine compliance rates with "No Burn" days, and to monitor effectiveness of VMT-reducing implementation measures. The Town shall condition or restrict future development as necessary to manage Town wide VMT at levels that ensure compliance with federal $PM_{10}$ NAAQS. The Town shall limit the total Town VMT to a level that, when modeled, shows $PM_{10}$ levels are less than the federal standard of 150 $\mu g/m^3$.

The MMRP for the Town of Mammoth Lakes Trails System Master Plan (TSMP) includes mitigation measures applicable to air quality. Since these are adopted measures, for purposes of this EIR, the following measures are applicable to the Project:

**TSMM 4.B-2.A:** All active portions of the construction site shall be watered to prevent excessive amounts of dust.

**TSMM 4.B-2.B:** On-site vehicles' speed shall be limited to 15 miles per hour (mph).

**TSMM 4.B-2.C:** All on-site roads shall be paved as soon as feasible or watered periodically or chemically stabilized.

**TSMM 4.B-2.D:** All material excavated or graded shall be sufficiently watered to prevent excessive amounts of dust; watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day.

**TSMM 4.B-2.E:** If dust is visibly generated that travels beyond the site boundaries, clearing, grading, earth moving or excavation activities that are generating dust shall cease during periods of high winds (i.e., greater than 25 mph averaged over one hour) or during Stage 1 or Stage 2 episodes.

**TSMM 4.B-2.F:** All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.

**TSMM 4.B-2.G:** The Town shall limit the extent of mass grading for all simultaneous TSMP construction and maintenance activities to no more than 5 acres of active disturbance daily.

**TSMM 4.B-2.H:** The Town shall limit TSMP construction activities in the following manner so as to ensure exhaust emissions shall not exceed the established daily thresholds for gaseous pollutants: No more than 20 pieces of construction equipment operating simultaneously per 8-hour day, or 16 pieces operating 10 hours per day, averaging 200 hp rated engine capacity. Each on-road delivery or haul truck traveling approximately 200 miles per day equals one piece of non-road equipment, and shall be included in the daily limit.

## 3. ENVIRONMENTAL IMPACTS

**Threshold AIR-1** The project would result in a significant impact if the project would conflict with or obstruct implementation of the applicable air quality plan.

***Impact Statement AIR-1:*** *Construction emissions associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update, or the individual Land Use Element/Zoning Code Amendments or Mobility Element Update would not conflict with or obstruct implementation of the AQMP. Therefore, construction impacts would be less than significant. Operational emissions associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the individual Mobility Element Update would comply with applicable AQMP regulations and would result in peak daily VMT that would not exceed the cap in the AQMP. Therefore, impacts would be less than significant. Operational emissions associated with implementation of the Land Use Element/Zoning Code Amendments with the existing roadway network would potentially result in peak daily VMT that exceeds the cap in the AQMP and potentially conflict with or obstruct implementation of the AQMP resulting in a potentially significant impact. Compliance with GPMM 4.2-1 and GPMM 4.2-2 would reduce impacts to a less than significant level.*

Pursuant to the Clean Air Act, the GBUAPCD is required to reduce emissions of criteria pollutants for which the Great Basin is in federal non-attainment. As established above, while Mono County is designated as non-attainment for ozone, there is no ozone AQMP applicable to the Town. As discussed previously, the CARB has determined that transport of emissions from the central portion of the San Joaquin Valley is responsible for ozone violations in Mammoth Lakes.[17] As a result, sources of ozone and ozone pre-cursor emissions (i.e., VOC, $NO_X$) within the Town do not jeopardize the region's attainment of the ozone standards.

The Town of Mammoth Lakes was designated as an attainment area for the federal $PM_{10}$ standards in 2015 and has an adopted Town of Mammoth Lake's $PM_{10}$ AQMP.[18] Therefore, certain Project-related activities may be subject to emission control strategies contained within the AQMP.[19]

### (a) Land Use Element/Zoning Code Amendments and Mobility Element Update Impacts

Construction emissions associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update would not be expected to occur on peak emissions inventory days for the Mammoth Lakes Planning Area. As stated in the AQMP, construction emissions are "seasonal and are absent during the winter when high $PM_{10}$ concentrations occur."[20] Further, "unpaved roads are either snow covered or muddy during the winter season and outdoor building and roadway construction activities generally do not take place until around May when the weather warms."[21] When Project construction activities would occur during the warmer months, construction fleet equipment would be

[17] *California Air Resources Board, Ozone Transport: 2001 Review, (April 2001) 45.*

[18] *Great Basin Unified Air Pollution Control District and the Town of Mammoth Lakes, Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, May 5, 2014.*

[19] *Great Basin Unified Air Pollution Control District and the Town of Mammoth Lakes, Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, May 5, 2014.*

[20] *Ibid., p. 17.*

[21] *Ibid., p. 17.*

required to comply with the CARB promulgated emission standards for off-road diesel construction equipment, which would minimize exhaust emissions of $PM_{10}$ and $PM_{2.5}$ as well as $NO_X$. In addition, construction associated with facilities covered in the TSMP, which focuses on non-motorized facilities for alternative forms of transportation, including pedestrians, bicyclists, and cross country skiers, would be required to comply with the applicable air quality mitigation measures TSMM 4.B-2.A through 4.B-2.H as listed above. As a result, construction activities under the combined Land Use Element/Zoning Code Amendments and Mobility Element Update would not conflict with or obstruct implementation of the AQMP and construction impacts would be less than significant.

Operation of the Project would result in emissions associated with mobile sources traveling within the town of Mammoth Lakes, from area and stationary sources associated with building energy usage, landscaping equipment, and from evaporative sources such as architectural coatings, solvents, cleaners, and other household and commercial products. The major contributors to ambient $PM_{10}$ concentrations in the town of Mammoth Lakes are particulate matter from residential wood combustion and re-suspended road dust from mobile sources. The Town of Mammoth Lakes adopted control measures for residential wood combustion and re-suspended road dust in the 1990 AQMP. Control measures for wood combustion include the following:

- Replacement or removal of existing uncertified residential wood combustion appliances at the time of sale of a property;
- Limit the maximum number of residential wood combustion appliances in new construction to one certified appliance plus one pellet fueled appliance;
- Institute voluntary and mandatory wood burning curtailment days; and
- Implement a public education program;

The 2014 AQMP amended the wood burning control measures as follows:

- Section 8.30.040 B. This section is modified to clarify that no new wood burning appliances may be installed in multi-family developments (one pellet-fueled heater per dwelling unit is allowed). Prohibition of new wood burning appliances in multi-family projects has been the policy of the Town. The proposed revision formalizes that practice and implements General Plan Policy R.10.3.
- Section 8.30.080, Mandatory Curtailment. This section has been modified to include all wood burning appliances, except pellet stoves, in the no-burn day program. Currently, EPA certified stoves are exempted under Town regulations, but are required to participate under the District regulations.

The Town of Mammoth Lakes also adopted measures for controlling re-suspended road dust in the 1990 AQMP, which included the establishment of a cap on VMT within the Town. The Town is required to evaluate development projects and other Town-approved activities that affect vehicle trips against the VMT cap. The 2014 AQMP incorporated revised traffic modeling and additional roadway segments and established an updated peak VMT cap of 179,708 miles on any given day. The air quality modeling demonstrates that this overall level of traffic would not cause an exceedance of the NAAQS.

Development that would occur as a result of the Land Use Element/Zoning Code Amendments and Mobility Element Update would comply with the applicable requirements in the AQMP. Implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update would result in an increase in daily VMT as compared to existing conditions. Based on the traffic impact analysis, the combined Land Use Element/Zoning Code Amendments and Mobility Element Update would result in an estimated peak daily VMT of 178,638 under full buildout conditions, which is greater than the existing peak daily VMT of 152,844 miles (see **Table 4.2-4**, *Vehicle Miles Traveled*, for the derivation of VMT estimates)[22] but less than the VMT cap of 179,708 in the AQMP. In Mammoth Lakes, with the combined Land Use Element/Zoning Code Amendments and Mobility Element Update, a threefold increase in sidewalk coverage in the General Pedestrian Zone, which corresponds to commercial districts along Main Street and Old Mammoth Road is likely to result in a 4.2 percent decrease in VMT generated by trips within the pedestrian zone. The bike lanes would increase by 127 percent which would result in a 32 percent increase in bicycle mode share for a total bike mode share of 4.6 percent. As shown in Table 4.2-4, an increase in sidewalk development in the General Pedestrian Zone results in a decrease of 330 miles with implementation of the Mobility Element Update (Scenario 6). In addition, the higher mode split associated with the increase in bicycle lanes would reduce total miles by 1,932 (see Table 4.2-4 as well as additional information below under (c) for derivation of VMT estimates). As the Project would comply with applicable AQMP requirements and the VMT would not exceed the AQMP cap, the combined Land Use Element/Zoning Code Amendments and Mobility Element Update would not conflict with implementation of the AQMP and operational impacts would be considered less than significant.

### (b) Land Use Element/Zoning Code Amendments Impacts

Construction emissions associated with development that would occur as a result of the proposed Land Use Element/Zoning Code Amendments under the existing roadway network would not be expected to occur on peak emissions inventory days for the Mammoth Lakes Planning Area. As discussed previously, construction activities associated with land use development and roadway improvements would result in seasonal emissions and would not occur on days associated with high $PM_{10}$ concentrations. When Project construction activities would occur during the warmer months, construction fleet equipment would be required to comply with the CARB promulgated emission standards for off-road diesel construction equipment, which would minimize exhaust emissions of $PM_{10}$ and $PM_{2.5}$ as well as $NO_X$. As a result, construction activities associated with development under the proposed Land Use Element/Zoning Code Amendments would not conflict with or obstruct implementation of the AQMP and construction impacts would be less than significant.

Operation of the Project would result in emissions associated with mobile sources traveling within the Town of Mammoth Lakes, from area and stationary sources associated with building energy usage, landscaping equipment, and from evaporative sources such as architectural coatings, solvents, cleaners, and other household and commercial products.

Development that would occur as a result of the Land Use Element/Zoning Code Amendments would comply with the applicable requirements in the AQMP. Based on the traffic impact analysis, full buildout under the proposed Land Use Element/Zoning Code Amendments with the existing roadway network could potentially exceed the VMT cap with an estimated peak daily VMT of 184,217, which is greater than the existing peak

[22] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

**Table 4.2-4**

**Vehicle Miles Traveled**

| VMT Parameter | Scenario 3- General Plan Buildout With Existing Roadway Network | Scenario 4- General Plan Buildout With Mobility Element Update | Scenario 5- Land Use Element/ Zoning Code Amendments With Existing Roadway Network | Scenario 6- Land Use Element/ Zoning Code Amendments With Mobility Element Update | VMT Cap [a] |
|---|---|---|---|---|---|
| Peak Daily VMT from Model | 179,233 | 179,826 | 184,217 | 180,900 | 179,708 |
| VMT of Trips with both ends within General Pedestrian Zone [b] | — | 6,230 | — | 7,895 | — |
| Mobility Element Update Pedestrian Network Adjustment | — | 4.2% | — | 4.2% | — |
| Pedestrian VMT Reduction under Mobility Element Update | — | 260 | — | 330 | — |
| Miles of Bicycle Lanes | 7.5 | 17.0 | 7.5 | 17.0 | — |
| Percent Bicycle Mode Share [c] | 3.5% | 4.6% | 3.5% | 4.6% | — |
| Bicycle VMT based on Mode Share | 6,273 | 8,144 | 6,448 | 8,379 | — |
| Bicycle VMT reduction under Mobility Plan Update | — | 1,871 | — | 1,932 | — |
| **Adjusted VMT** | **179,233** | **173,695** | **184,217** | **178,638** | **179,708** |
| Percent above/below VMT Cap | -0.3% | -3.3% | 2.5% | -0.6% | — |

*Scenario 1 (not shown): Existing Conditions with Existing Roadways with a VMT of 152,844.*
*Scenario 2 (not shown): Existing Conditions with Mobility Element Update Roadways with a VMT of 149,444.*
*Scenario 3: Future General Plan with Existing Roadways.*
*Scenario 4: Future General Plan with Mobility Element Update Roadways.*
*Scenario 5: Future Land Use/Zoning Code Amendments with Existing Roadways.*
*Scenario 6: Future Land Use/Zoning Code Amendments with Mobility Element Update Roadways.*

[a] *Town of Mammoth Lakes, Municipal Code, Chapter 8.30 (Town Particulate Matter Ordinance).*

[b] *The "General Pedestrian Zone" is defined in the Mobility Element Update as extending from North Village along Main Street to Sierra Park Road and continuing along Old Mammoth Road to Chateau Road.*

[c] *Increases in Mode Share are based on increases in bicycle lane miles and Inyo County Active Transportation Plan (LSC, 2016).*

*Source: LSC, Town of Mammoth Lakes Transportation Impact Analysis, April 2016.*

daily VMT of 152,844 miles (see Table 4.2-4 above as well as additional information below under (c) for derivation of VMT estimates)[23] and greater than the VMT cap of 179,708 in the AQMP. As a result, the proposed Land Use Element/Zoning Code Amendments (without the Mobility Element Update) would potentially conflict with implementation of the AQMP and operational impacts would be considered potentially significant and would require mitigation.

## (c) Mobility Element Update Impacts

Construction emissions associated with the proposed Mobility Element Update under existing land use development conditions would not be expected to occur on peak emissions inventory days for the Mammoth

[23] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

Lakes Planning Area. Construction activities associated with roadway improvements would result in seasonal emissions and would not occur on days associated with high $PM_{10}$ concentrations. When roadway construction activities would take place, construction fleet equipment would be required to comply with the CARB promulgated emission standards for off-road diesel construction equipment, which would minimize exhaust emissions of $PM_{10}$ and $PM_{2.5}$ as well as $NO_X$. In addition, construction associated with facilities covered in the TSMP, which focuses on non-motorized facilities for alternative forms of transportation, including pedestrians, bicyclists, and cross country skiers, would be required to comply with the applicable air quality mitigation measures TSMM 4.B-2.A through 4.B-2.H as listed above. Construction sites associated with the proposed Mobility Element Update would be spread throughout the area and would occur over a span of several years. As a result, multiple construction projects are not likely to simultaneously impact the same local sensitive receptors. Therefore, construction activities under the proposed Mobility Element Update would not conflict with or obstruct implementation of the AQMP and construction impacts would be less than significant.

Implementation of the Mobility Element Update under existing land use development conditions would result in a reduction in daily VMT as compared to existing conditions without the Mobility Element Update. Based on the traffic impact analysis, the Mobility Element Update would result in an estimated peak daily VMT of 149,444 under existing conditions compared to a VMT of 152,844 under existing conditions without the Mobility Element Update. Similarly, implementation of the Mobility Element Update under future General Plan development conditions would result in a peak daily VMT of 173,695 compared to a VMT of 179,233 under future General Plan conditions without the Mobility Element Update.[24] The trip generation rates account for existing bicycle and pedestrian use in that trip generation is lower than it would be if there were no bicycle or pedestrian trips.[25] The effects of proposed improved pedestrian connectivity in the Town's commercial districts, an increase in Class II bicycle lanes, and future transit improvements under the Mobility Element Update are taken into account in the evaluation of total trips (expressed as VMT) that would occur under the various analysis scenarios. According to *An Assessment of Urban Form and Pedestrian and Transit Improvements as an Integrated GHG Reduction Strategy*, a direct correlation exists between increase in sidewalk coverage and reduction in traffic. A threefold increase in sidewalk coverage in the General Pedestrian Zone, which corresponds to commercial districts along Main Street and Old Mammoth Road is likely to result in a 4.2 percent decrease in VMT generated by trips within the pedestrian zone. A correlation also occurs between miles of bike lanes and increase in the bicycle mode in the overall mode split. The current bicycling mode split in Mammoth Lakes is 3.5 percent, based on *2010-2014 American Community Survey 5-Year Estimates*.[26] According to the *Inyo County Active Transportation Plan* (ATP) 2016, a doubling of the miles of bike lanes would likely result in a 25 percent increase in bicycle mode share. In Mammoth Lakes, with the Mobility Element Update, the bike lanes would increase by 127 percent which would result in a 32 percent increase in bicycle mode share for a total bike mode share of 4.6 percent. The benefits of increased pedestrian activity and the bicycle mode split are illustrated in Table 4.2-4 for the various scenarios analyzed. As shown in Table 4.2-4, an increase in sidewalk development in the General Pedestrian Zone results in a decrease of 260 miles with implementation of the Mobility Element Update (Scenario 4). In addition, the higher mode split associated with the increase in bicycle lanes would reduce total miles by 1,871 (Scenario 4). As VMT would not exceed the AQMP cap, the proposed Mobility Element

[24] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

[25] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

[26] *U.S. Census Bureau, American FactFinder, Data Set B08301 (Means of Transportation to Work, Mammoth Lakes, 2010-2014), http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed April 2016.*

Update would not conflict with implementation of the AQMP and operational impacts would be considered less than significant.

### Mitigation Measures

Implementation of the Land Use Element/Zoning Code Amendments under the existing roadway network would potentially result in development that could exceed the daily VMT cap in the AQMP and potentially result in emissions of $PM_{10}$ that would cause an exceedance of the NAAQS. The MMRP for the Town is required to implement GPMM 4.2-1 and GPMM 4.2-2 as discussed previously. Compliance with GPMMs 4.2-1 and 4.2-2 would reduce impacts to less than significant levels. No additional feasible mitigation measures are identified or required.

**Threshold AIR-2** The project would result in a significant impact if the project would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

***Impact Statement AIR-2:*** *Construction emissions associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network could potentially result in temporary and short-term significant impacts. Compliance with Mitigation Measures AIR-1 and AIR-2 would reduce construction emissions; however, impacts would be potentially significant and unavoidable. Construction activities associated with implementation of the Mobility Element Update under existing land use development conditions would be required to comply with applicable State and GBUAPCD regulations and applicable air quality mitigation measures TSMM 4.B-2.A through 4.B-2.H and would result in less than significant impacts. The incremental change in peak daily operational emissions associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network would potentially exceed the significance thresholds and operational impacts would be considered potentially significant. Compliance with GPMM 4.2-1 and GPMM 4.2-2 and Mitigation Measure AIR-3 would reduce operational emissions; however, impacts would be potentially significant and unavoidable. The incremental change in peak daily operational emissions associated with implementation of the Mobility Element Update under existing land use development conditions would not exceed the significance thresholds and operational impacts would be considered less than significant.*

### (a) Land Use Element/Zoning Code Amendments and Mobility Element Update Impacts

Construction activities that would occur as a result of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update would cause temporary, short-term emissions of air pollutants such as VOCs and $NO_X$, which are ozone precursors, and $PM_{10}$ and $PM_{2.5}$. Construction activities in the Project Area would also occur without implementation of the Land Use Element/Zoning Code Amendments in accordance with existing land use zoning under the current General Plan. Emissions would be generated by construction equipment during various activities, such as grading and excavation, infrastructure construction, building demolition, and architectural coating activities. Information regarding specific development projects, soil conditions, and the location of sensitive receptors in relation to the various projects would be needed in order to quantify the level of impact associated with construction activity. However, given the amount of development associated with implementation of the Land Use Element/Zoning Code Amendments along with the Mobility Element Update, it is reasonable to assume that on a programmatic-level, some large-scale construction activity could exceed GBUAPCD thresholds. Actual

significance would be determined on a project-level basis as future development applications are submitted and more detailed information regarding construction activity becomes available. Construction activities would be required to comply with applicable State and GBUAPCD regulations including the CARB on-road and off-road vehicle rules that limit idling to five minutes and require construction fleets to meet stringent $NO_X$, $PM_{10}$, and $PM_{2.5}$ exhaust standards, and GBUAPCD Rules 401 and 402 (Fugitive Dust and Nuisance) that limit fugitive dust emissions. However, even with compliance of these rules and regulations, construction of the land uses permitted by the Land Use Element/Zoning Code Amendments and mobility improvements under the Mobility Element Update would have the potential to contribute substantially to an existing or projected air quality violation. As a result construction impacts would be considered potentially significant.

Operation of the land uses developed pursuant to implementation of the Land Use Element/Zoning Code Amendments and the Mobility Element Update would result in area and mobile source emissions generated by future development and population growth. Full buildout under the proposed Land Use Element/Zoning Code Amendments and Mobility Element Update would result in a peak daily VMT of 178,638 miles per day. The incremental change from existing conditions in peak daily emissions of VOCs, $NO_X$, CO, $SO_2$, $PM_{10}$, and $PM_{2.5}$ from the land uses under the Land Use Element/Zoning Code Amendments and implementation of the Mobility Element Update is provided in **Table 4.2-5**, *Incremental Change in Peak Daily Operational Emissions – Land Use Element/Zoning Code Amendments and Mobility Element Update*. As shown in Table 4.2-5, the incremental change in operational emissions associated with future growth in accordance with the Land Use Element/Zoning Code Amendments and Mobility Element Update compared to existing conditions would potentially exceed the thresholds for $PM_{10}$ and $PM_{2.5}$ and potentially to contribute substantially to an existing or projected air quality violation (CAAQS or NAAQS). Although buildout of the Land Use Element/Zoning Code Amendments and Mobility Element Update would result in an increase in the total amount of vehicle miles traveled, emissions of mobile source exhaust pollutants, in particular VOC, $NO_X$, and CO, are expected to decline due to improved vehicle emission standards and fuel economy standards that have been adopted by the USEPA and State of California. Operational impacts from implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update would be potentially significant.

### (b) Land Use Element/Zoning Code Amendments Impacts

Construction activities that would occur as a result of the Land Use Element/Zoning Code Amendments under the existing roadway network would cause temporary, short-term emissions of air pollutants such as VOCs and $NO_X$, which are ozone precursors, and $PM_{10}$ and $PM_{2.5}$. Construction activities in the Project Area would also occur without implementation of the Land Use Element/Zoning Code Amendments in accordance with existing land use zoning under the current General Plan. Given the amount of development associated with implementation of the Land Use Element/Zoning Code Amendments, it is reasonable to assume that on a programmatic-level, some large-scale construction activity could occur. Actual significance would be determined on a project-level basis as future development applications are submitted and more detailed information regarding construction activity becomes available. Construction activities would be required to comply with applicable State and GBUAPCD regulations including the CARB on-road and off-road vehicle rules that limit idling to five minutes and require construction fleets to meet stringent $NO_X$, $PM_{10}$, and $PM_{2.5}$ exhaust standards, and GBUAPCD Rules 401 and 402 (Fugitive Dust and Nuisance) that limit fugitive dust emissions. However, even with compliance of these rules and regulations, construction of the land uses permitted by the Land Use Element/Zoning Code Amendments would have the potential to contribute substantially to an existing or projected air quality violation (CAAQS or NAAQS). As a result construction impacts would be considered potentially significant.

**Table 4.2-5**

**Incremental Change in Peak Daily Operational Emissions – Land Use Element/Zoning Code Amendments and Mobility Element Update (Pounds per Day)**

| Emission Source | VOC | $NO_X$ | CO | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| **Land Use Element/Zoning Code Amendments and Mobility Element Update** | | | | | | |
| Entrained Road Dust – Cinders/Paved Road [a] | — | — | — | — | 992 | 244 |
| Mobile – Exhaust, Tire and Break Wear [b] | -16 | -22 | -137 | <1 | 2 | 1 |
| Stationary – Area Sources | 9 | <1 | <1 | <1 | <1 | <1 |
| Stationary – Energy Sources | <1 | 1 | <1 | <1 | <1 | <1 |
| **Incremental Change in Emissions** | **-7** | **-21** | **-137** | **<1** | **995** | **244** |
| **Significance Threshold** | **55** | **55** | **550** | **150** | **150** | **55** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** | **Yes** | **Yes** |

*Energy and area emissions are calculated using the CalEEMod emissions model. Energy sources include natural gas consumption. Area sources include landscaping equipment fuel consumption, residential consumer products and miscellaneous sources (e.g., architectural coatings). Mobile source (exhaust, tire and break wear) emissions are calculated using EMFAC2014. Numbers may not add up exactly due to rounding.*

[a] *$PM_{10}$ and $PM_{2.5}$ emissions for these sources are based on the methodology in Great Basin Air Pollution Control District, 2014 Update Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, (May 2014).*

[b] *The incremental change in emissions for this source is negative because mobile source exhaust pollutants are expected to decline in the future due to improved vehicle emission standards and fuel economy standards that have been adopted by the USEPA and State of California.*

*Source: ESA PCR, 2016*

Operation of the land uses developed pursuant to implementation of the Land Use Element/Zoning Code Amendments under the existing roadway network would result in area and mobile source emissions generated by future development and population growth. Full buildout under the proposed Land Use Element/Zoning Code Amendments would result in a peak daily VMT of 184,217 miles per day. The incremental change from existing conditions in peak daily emissions of VOCs, $NO_X$, CO, $SO_2$, $PM_{10}$, and $PM_{2.5}$ from the development of new land uses under the Land Use Element/Zoning Code Amendments is provided in **Table 4.2-6**, *Incremental Change in Peak Daily Operational Emissions – Land Use Element/Zoning Code Amendments*. As shown in Table 4.2-6, the incremental change in operational emissions associated with future growth in accordance with the Land Use Element/Zoning Code Amendments compared to existing conditions would exceed the thresholds for $PM_{10}$ and $PM_{2.5}$ and potentially contribute substantially to an existing or projected air quality violation (CAAQS or NAAQS). Although buildout of the Land Use Element/Zoning Code Amendments would result in an increase in the total amount of vehicle miles traveled, emissions of mobile source exhaust pollutants, in particular VOC, $NO_X$, and CO, are expected to decline due to improved vehicle emission standards and fuel economy standards that have been adopted by the USEPA and State of California. Operational impacts from implementation of the Land Use Element/Zoning Code Amendments would be potentially significant.

**Table 4.2-6**

**Incremental Change in Peak Daily Operational Emissions – Land Use Element/Zoning Code Amendments (Pounds per Day)**

| Emission Source | VOC | $NO_X$ | CO | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| **Land Use Element/Zoning Code Amendments** | | | | | | |
| Entrained Road Dust – Cinders/Paved Road [a] | — | — | — | — | 1,207 | 296 |
| Mobile – Exhaust, Tire and Break Wear [b] | -16 | -21 | -135 | <1 | 2 | 1 |
| Stationary – Area Sources | 9 | <1 | <1 | <1 | <1 | <1 |
| Stationary – Energy Sources | <1 | 1 | <1 | <1 | <1 | <1 |
| **Incremental Change in Emissions** | **-6** | **-21** | **-135** | **<1** | **1,210** | **297** |
| **Significance Threshold** | **55** | **55** | **550** | **150** | **150** | **55** |
| **Exceed Threshold?** | **No** | **No** | **No** | **No** | **Yes** | **Yes** |

*Energy and area emissions are calculated using the CalEEMod emissions model. Energy sources include natural gas consumption. Area sources include landscaping equipment fuel consumption, residential consumer products and miscellaneous sources (e.g., architectural coatings). Mobile source (exhaust, tire and break wear) emissions are calculated using EMFAC2014. Numbers may not add up exactly due to rounding.*

[a] *$PM_{10}$ and $PM_{2.5}$ emissions for these sources are based on the methodology in Great Basin Air Pollution Control District, 2014 Update Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, (May 2014).*

[b] *The incremental change in emissions for this source is negative because mobile source exhaust pollutants are expected to decline in the future due to improved vehicle emission standards and fuel economy standards that have been adopted by the USEPA and State of California.*

*Source: ESA PCR, 2016*

## (c) Mobility Element Update Impacts

Construction activities that would occur as a result of the Mobility Element Update under existing land use development conditions would cause temporary, short-term emissions of air pollutants such as VOCs and $NO_X$, which are ozone precursors, and $PM_{10}$ and $PM_{2.5}$ from roadway improvement activities. Emissions would be generated by construction equipment during various activities, such as demolition of existing asphalt, grading, and new asphalt paving. The scope of construction activities associated with implementation of the Mobility Element Update would generally be limited to roadway construction, sidewalks, trails, bicycle lanes, and reconfiguration of Main Street. Roadway construction activities would be required to comply with applicable State and GBUAPCD regulations including the CARB on-road and off-road vehicle rules that limit idling to five minutes and require construction fleets to meet stringent $NO_X$, $PM_{10}$, and $PM_{2.5}$ exhaust standards, and GBUAPCD Rules 401 and 402 (Fugitive Dust and Nuisance) that limit fugitive dust emissions. Construction associated with facilities covered in the TSMP, which focuses on non-motorized facilities for alternative forms of transportation, including pedestrians, bicyclists, and cross country skiers, would be required to comply with the applicable air quality mitigation measures TSMM 4.B-2.A through 4.B-2.H as listed above. Construction sites associated with the proposed Mobility Element Update would be spread throughout the area and would occur over a span of several years. As a result, construction activities would not likely be intensive are would not result in regional impacts. Therefore, it is reasonable to conclude that construction activity would likely not exceed significance thresholds. As a result construction impacts would be considered less than significant.

Implementation of the Mobility Element Update under existing land use development conditions would result in reduced VMT as compared to existing or future conditions. Under the Mobility Element Update, peak daily VMT would be reduced from 152,844 miles to 149,444 miles under existing development conditions. Under future General Plan conditions, the Mobility Element Update would reduce peak daily VMT from 179,233 miles to 173,695 miles at full buildout. The incremental change from existing conditions in peak daily emissions of VOCs, $NO_X$, CO, $SO_2$, $PM_{10}$, and $PM_{2.5}$ as a result of implementation of the Mobility Element Update is provided in **Table 4.2-7**, *Incremental Change in Peak Daily Operational Emissions – Mobility Element Update*. As shown in Table 4.2-7, the incremental change in operational emissions associated with the Mobility Element Update would not exceed the thresholds. Operational impacts from implementation of the Mobility Element Update would be less than significant.

**Table 4.2-7**

**Incremental Change in Peak Daily Operational Emissions – Mobility Element Update**
**(Pounds per Day)**

| Emission Source | VOC | $NO_X$ | CO | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| **Mobility Element Update** | | | | | | |
| Entrained Road Dust – Cinders/Paved Road [a] | — | — | — | — | -131 | -32 |
| Mobile – Exhaust, Tire and Break Wear [b] | -1 | -1 | 0 | 0 | -0.1 | 0 |
| **Incremental Change in Emissions** | **-1** | **-1** | **0** | **0** | **-131** | **-32** |
| **Significance Threshold** | **55** | **55** | **550** | **150** | **150** | **55** |
| **Exceed Threshold?** | No | No | No | No | No | No |

*Mobile source (exhaust, tire and break wear) emissions are calculated using EMFAC2014. Numbers may not add up exactly due to rounding.*

[a] *$PM_{10}$ and $PM_{2.5}$ emissions for these sources are based on the methodology in Great Basin Air Pollution Control District, 2014 Update Air Quality Maintenance Plan and Redesignation Request for the Town of Mammoth Lakes, (May 2014).*

[b] *The incremental change in emissions for this source is negative because the Mobility Element Update results in a decrease in VMT.*

*Source: ESA PCR, 2016*

## Mitigation Measures

Implementation of the Land Use Element/Zoning Code Amendments or the combined Land Use Element/Zoning Code Amendments and Mobility Element Update could potentially result in construction and operational impacts that could exceed the thresholds. Therefore, the following mitigation measures are recommended:

**MM AIR-1:** Prior to the issuance of a grading or building permit, individual proposed projects shall comply with the following land preparation, excavation, and/or demolition mitigation measures during construction activities:

- All soil excavated or graded should be sufficiently watered to prevent excessive dust. Watering should occur as needed with complete coverage of disturbed soil areas. Watering should be a minimum of twice daily on unpaved/untreated roads and on disturbed soil areas with active operations.

- All clearing, grading, earth moving and excavation activities should cease: (a) during periods of winds greater than 20 mph (averaged over one hour), if disturbed material is easily windblown, or (b) when dust plumes of 20 percent or greater opacity impact public roads, occupied structures or neighboring property.
- Vehicles traveling over unpaved roadways shall be limited to 15 miles per hour or less. Signs shall be posted at construction sites enforcing the speed limit.
- All trucks hauling dirt, sand, soil, or other loose material shall be covered or maintain at least two feet or freeboards in accordance with the requirements of California Vehicle Code (CVC) Section 23114.
- If more than 5,000 cubic yards of fill material will be imported or exported from the site, then all haul trucks shall be required to exit the site via an access point where a gravel pad, rumble pad, or similar control has been installed.
- Streets adjacent to project construction areas shall be kept clean. Adjacent streets with visible dust, dirt, sand, or soil material accumulation shall be cleaned and the accumulated material removed using Town-approved street sweepers.
- Stockpiles of soil or other fine loose material shall be stabilized by watering or other appropriate method to prevent wind-blown fugitive dust.
- Where acceptable to the local fire department, weed control should be accomplished by mowing instead of discing, thereby, leaving the ground undisturbed and with a mulch covering.

**MM AIR-2:** Prior to the issuance of a grading or building permit, individual proposed projects shall comply with the following construction equipment mitigation measures:

- Construction equipment, on-road trucks, and emission control devices shall be properly maintained and tuned in accordance with manufacturer specifications.
- Construction contractors shall be required to comply with California's on-road and off-road vehicle emissions regulations, including the CARB idling restrictions and the USEPA/CARB on-road and off-road diesel vehicle emissions standards.

**MM AIR-3:** Prior to the issuance of a building permit, individual proposed projects shall comply with the following mitigation measures:

- Provide direct pedestrian and bicycle access to off-site adjacent neighborhood amenities, parks, schools, shopping areas, existing bike paths, and transit stops in any residential development with a density of four or more residences per acre and in any mixed-use or commercial development. Low, medium, and high density developments should have curbs and sidewalks on both sides of the street.
- For medium to high density residential, mixed-use, or commercial developments where transit services exist but no transit stop is located within 1/2 mile of the site, projects shall provide plans indicating locations of bus turnouts and loading areas with shelters that are acceptable to the local transit provider. This area will provide for future easement for bus turnouts and shelters. If transit service does not exist, but the project is within a transit district's sphere of influence, provide a site at a location and size acceptable to the transit provider.

**Threshold AIR-3** The project would result in a significant impact if the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

***Impact Statement AIR-3:*** *Project implementation would potentially result in significant cumulative considerable net increases of a criteria pollutant for which the project region is non-attainment, based on the applicable federal or state ambient air quality standards (including ozone precursors). Compliance with GPMMs 4.2-1 and DF 4.2-2 and Mitigation Measures AIR-1 through AIR-3 would reduce construction and operational emissions; however, impacts would be potentially significant and unavoidable.*

### (a) Land Use Element/Zoning Code Amendments and Mobility Element Update Impacts

The Mammoth Lakes portion of the GBVAB is designated as nonattainment for ozone (State standard only) and a nonattainment area for $PM_{10}$ (State standard only). The area was previously designated as non-attainment for the federal $PM_{10}$ standard, but the USEPA approved the redesignation to attainment request in October 2015. The GBUAPCD does not have numerical thresholds for criteria pollutants to determine whether implementation of the Land Use Element/Zoning Code Amendments would result in a cumulatively considerable net increase of ozone precursors or $PM_{10}$ emissions. However, as discussed previously, CARB has determined that the ozone exceedance in the Mammoth Lakes Planning Area is the result of pollution generated in the San Joaquin Valley. Implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update would not result in a cumulatively considerable increase in ozone and ozone pre-cursor emissions during construction or operations (i.e., VOC, $NO_X$) and ozone impacts would be less than significant.

Implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update would result in $PM_{10}$ emissions, primarily from re-entrained road dust. As discussed previously, full buildout of the Land Use Element/Zoning Code Amendments and Mobility Element Update would result in peak daily VMT that would not exceed the cap in the AQMP. However, as shown previously in Table 4.2-5, the incremental change in emissions of $PM_{10}$ would exceed the numeric daily emission thresholds. Therefore, development under the Land Use Element/Zoning Code Amendments and Mobility Element Update would potentially result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment (i.e., State standard for $PM_{10}$) and impacts would be considered potentially significant.

### (b) Land Use Element/Zoning Code Amendments Impacts

As discussed previously, CARB has determined that the ozone exceedance is the result of pollution generated in the San Joaquin Valley, transported by air currents and winds over the Sierra Nevada's into the Mammoth Lakes Planning Area and is not a condition substantially generated by Town activities or policies. Implementation of the Land Use Element/Zoning Code Amendments would not result in a cumulatively considerable increase in ozone and ozone pre-cursor emissions during construction or operations (i.e., VOC, $NO_X$) and ozone impacts would be less than significant.

Implementation of the Land Use Element/Zoning Code Amendments would result in $PM_{10}$ emissions, primarily from re-entrained road dust. As discussed previously, full buildout of the Land Use

Element/Zoning Code Amendments would result in peak daily VMT that exceeds the cap in the AQMP. Further, as shown previously in Table 4.2-6, the incremental change in emissions of $PM_{10}$ would exceed the numeric daily emission thresholds. Therefore, development under the Land Use Element/Zoning Code Amendments would potentially result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment (i.e., State standard for $PM_{10}$) and impacts would be considered potentially significant.

### (c) Mobility Element Update Impacts

CARB has determined that the ozone exceedance in the Mammoth Lakes Planning Area is the result of pollution generated in the San Joaquin Valley. Implementation of the Mobility Element Update would not result in a cumulatively considerable increase in ozone and ozone pre-cursor emissions during construction or operations (i.e., VOC, $NO_X$) and ozone impacts would be less than significant.

Implementation of the Mobility Element Update would result in reduced daily VMT as compared to existing conditions and future General Plan buildout conditions. Therefore, the Mobility Element Update would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment and impacts would be considered less than significant.

### Mitigation Measures

Implementation of GPMM 4.2-1 and GPMM 4.2-2 and compliance with Mitigation Measures AIR-1 through AIR-3 would reduce construction and operational emissions. No additional feasible mitigation measures are identified.

**Threshold AIR-4** The project would result in a significant impact if the project would expose sensitive receptors to substantial pollutant concentrations.

***Impact Statement AIR-4:*** *Construction activities associated with implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network could potentially result in significant impacts with regard to incremental increase in cancer risks. Compliance with Mitigation Measure AIR-4 would reduce impacts to less than significant. Implementation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network could potentially expose sensitive receptors or populations in the Project Area to substantial pollutant concentrations. Compliance with applicable State and GBUAPCD regulations as well as TSMM 4.B-2.A through 4.B-2.H and Mitigation Measure AIR-4 would reduce impacts to less than significant. Construction and operation of the Mobility Element Update under existing land use development conditions would be less than significant.*

### (a) Land Use Element/Zoning Code Amendments and Mobility Element Update Impacts

Construction activities that would occur as a result of the Land Use Element/Zoning Code Amendments and Mobility Element Update would cause temporary, short-term emissions of TACs. In addition, incidental amounts of toxic substances such as oils, solvents, and paints would be used during construction. These sources of TAC emissions would comply with applicable CARB and GBUAPCD rules for their manufacture and use. Construction equipment would be required to comply with the CARB Air Toxics Control Measure that

limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation which requires construction equipment meet the USEPA/CARB certified Tier 4 standards by 2023 for large and medium fleets and 2028 for small fleets.

The Office of Environmental Health and Hazard Assessment (OEHHA) is responsible for developing guidelines for performing health risk assessments (HRAs). In March 2015, OEHHA adopted new guidelines which results in numeric life-time health risk values to be approximately two to three times higher than those calculated under the previous guidelines. The GBUAPCD, the responsible air quality regulatory agency for the Mammoth Lakes Planning Area, has not provided guidance on the March 2015 OEHHA guidelines. However, another air quality regulatory agency, the South Coast Air Quality Management District (SCAQMD), has stated that a typical one-acre office project with a six-month construction duration could result in a significant health risk impact with regard to construction emissions.[27] Given the amount of development associated with implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update, it is reasonable to assume that on a programmatic-level, some large-scale construction activity could occur, which could potentially result in significant impacts with regard to incremental increase in cancer risks. The GBUAPCD, the responsible air quality regulatory agency for the Mammoth Lakes Planning Area, has not provided guidance on the March 2015 OEHHA guidelines. Therefore, it is conservatively assumed that, based on SCAQMD's estimated health risk impacts for typical construction activities, implementation of the Land Use Element/Zoning Code Amendments could result in a potentially significant incremental increase in health risk during construction. Therefore, impacts related to construction TAC emissions would be considered potentially significant.

Development permitted under the Land Use Element/Zoning Code Amendments and Mobility Element Update could place sensitive land uses or populations near local intersections or heavily traveled roadways associated with air pollutant emissions, including TACs. In addition, a variety of TAC emissions could be released from various operational activities (i.e., diesel equipment and vehicles) associated with implementation of the Land Use Element/Zoning Code Amendments. Emissions are controlled at the local and regional level through the Town's planning process and the GBUAPCD permitting process. Specifically, any stationary sources associated with implementation of the Land Use Element/Zoning Code Amendments would be subject to further study prior to the issuance of any necessary air quality permits.

The CARB *Air Quality and Land Use Handbook* provides recommendations for siting sensitive land uses near the following specific sources of air pollution: high traffic freeways and roads; distribution centers; rail yards; ports; refineries; chrome plating facilities; dry cleaners; and large gas dispensing facilities. The allowed land uses in the Land Use Element/Zoning Code Amendments would not include rail yards, ports, refineries, or chrome plating facilities; therefore, these uses are not discussed further. Advisory recommendations for the remaining land uses are provided in **Table 4.2-8**, *CARB Recommendations on Siting New Sensitive Land Uses*. CARB considers these recommendations to be advisory. The recommendations are not mandated by State law, but only serve as a general guidance to lead agencies when considering land use projects. The *Air Quality and Land Use Handbook* states that it is up to lead agencies to balance other

[27] *South Coast Air Quality Management District, Presentation – Potential Impacts of New OEHHA Risk Guidelines on SCAQMD Programs. http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2014/may-specsess-8b.pdf. Accessed May 2015.*

**Table 4.2-8**

**CARB Recommendations on Siting New Sensitive Land Uses**

| Source Category | Advisory Recommendations |
|---|---|
| Freeways and High-Traffic Roads | ▪ Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. |
| Distribution Centers | ▪ Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week).<br>▪ Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points |
| Dry Cleaners using Perchloroethylene | ▪ Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district.<br>▪ Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations. |
| Gasoline Dispensing Facilities | ▪ Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).<br>▪ A 50-foot separation is recommended for typical gas dispensing facilities. |

*Source: California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, (2005).*

considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.[28]

Development under the Land Use Element/Zoning Code Amendments would generally result in an increase in density in the Town's center. Therefore, it is possible that sensitive uses could be located near sources of TAC emissions within the distances specified in the CARB advisory recommendations (see Table 4.2-8). As a result, impacts related to operational TAC emissions would be considered potentially significant.

The potential for implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update to cause or contribute to CO hotspots is based on the change in the LOS at roadway intersections. The Transportation Impact Analysis for the Project[29] indicates that development under the Land Use Element/Zoning Code Amendments and Mobility Element Update could result in traffic conditions that would exceed the LOS standards at several of the analyzed roadway intersections, primarily along Main Street and Old Mammoth Road. Under the Land Use Element/Zoning Code Amendments and Mobility

[28] *California Air Resources Board, Air Quality and Land Use Handbook: A Community Health Perspective, (2005) 4.*

[29] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

Element Update, the highest traffic volume at these intersections would be approximately 27,300 vehicles per day.

The GBUAPCD is in attainment of the CO standards and does not monitor CO. The nearest CO monitoring station to the Town is located in Fresno County, which recorded peak values between years 2013 through 2015 of 2.4 parts per million (ppm) over a one-hour average and 1.7 ppm over an eight-hour average. The potential for CO hotspot impacts is based on a comparative analysis from CO hotspots modeling conducted by the SCAQMD its 2003 AQMP for the four worst-case intersections in areas under its jurisdiction (i.e., South Coast Air Basin). The maximum impacted intersection had an average daily traffic volume of about 100,000 vehicles per day.[30] The evidence provided in Table 4-10 of Appendix V of the SCAQMD 2003 AQMP shows that the peak modeled CO concentration due to vehicle emissions was 4.6 ppm (one-hour average) and 3.2 ppm (eight-hour average).[31] Based on this information and the peak daily traffic volumes under the Land Use Element/Zoning Code Amendments and Mobility Element Update, the CO hotspot concentrations (vehicle emissions plus background) would be expected to be approximately 3.7 ppm (one-hour average) and 2.6 ppm (eight-hour average) or less, which is less than the thresholds of 20 ppm (one-hour average) and 9.0 ppm (eight-hour average). Thus, implementation of the Land Use Element/Zoning Code Amendments and Mobility Element Update would not cause or contribute to the formation of CO hotspots and no further CO analysis is warranted or required. Impacts would be considered less than significant.

### (b) Land Use Element/Zoning Code Amendments Impacts

As discussed previously, construction activities that would occur as a result of the Land Use Element/Zoning Code Amendments would cause temporary, short-term emissions of TACs. Construction equipment would be subject to USEPA and CARB regulations designed to limit exposure to TACs during construction activities, including the CARB anti-idling Air Toxics Control Measure and the In-Use Off-Road Diesel Vehicle Regulation. Given the amount of development associated with implementation of the Land Use Element/Zoning Code Amendments, it is reasonable to assume that on a programmatic-level, some large-scale construction activity could occur, which could potentially result in significant impacts with regard to incremental increase in cancer risks. The GBUAPCD, the responsible air quality regulatory agency for the Mammoth Lakes Planning Area, has not provided guidance on the March 2015 OEHHA guidelines. Therefore, it is conservatively assumed that, based on SCAQMD's estimated health risk impacts for typical construction activities, implementation of the Land Use Element/Zoning Code Amendments could result in a potentially significant incremental increase in health risk during construction. Therefore, impacts related to construction TAC emissions would be considered potentially significant.

Development permitted under the Land Use Element/Zoning Code Amendments could place sensitive land uses or populations near local intersections or heavily traveled roadways associated with air pollutant emissions, including TACs. In addition, a variety of TAC emissions could be released from various operational activities (i.e., diesel equipment and vehicles) associated with implementation of the Land Use Element/Zoning Code Amendments. As discussed previously, development under the Land Use Element/Zoning Code Amendments would generally result in an increase in density in the Town's center. Therefore, it is possible that sensitive uses could be located near sources of TAC emissions within the

[30] *South Coast Air Quality Management District, 2003 Air Quality Management Plan, Appendix V: Modeling and Attainment Demonstrations, (2003) V-4-24.*

[31] *The eight-hour average is based on a 0.7 persistence factor, as recommended by the SCAQMD.*

distances specified in the CARB advisory recommendations (see Table 4.2-8). As a result, impacts related to operational TAC emissions would be considered potentially significant.

The potential for implementation of the Land Use Element/Zoning Code Amendments to cause or contribute to CO hotspots is based on the change in the LOS at roadway intersections. The Transportation Impact Analysis for the Project[32] indicates that development under the Land Use Element/Zoning Code Amendments could result in traffic conditions that would exceed the LOS standards at several of the analyzed roadway intersections, primarily along Main Street and Old Mammoth Road. Under the Land Use Element/Zoning Code Amendments, the highest traffic volume at these intersections would be approximately 23,400 vehicles per day.

The CO hotspot concentrations (vehicle emissions plus background) would be expected to be approximately 3.5 ppm (one-hour average) and 2.4 ppm (eight-hour average) or less, which is less than the thresholds of 20 ppm (one-hour average) and 9.0 ppm (eight-hour average). Thus, implementation of the Land Use Element/Zoning Code Amendments would not cause or contribute to the formation of CO hotspots and no further CO analysis is warranted or required. Impacts would be considered less than significant.

### (c) Mobility Element Update Impacts

Construction activities that would occur as a result of the Mobility Element Update would cause temporary, short-term emissions of TACs. The scope of construction activities associated with implementation of the Mobility Element Update would generally be limited to roadway construction, sidewalks, trails, bicycle lanes, and reconfiguration of Main Street and would generally not require prolonged and intensive use of heavy-duty equipment. Construction equipment would be subject to USEPA and CARB regulations designed to limit exposure to TACs during construction activities, including the CARB anti-idling Air Toxics Control Measure and the In-Use Off-Road Diesel Vehicle Regulation. Construction associated with facilities covered in the TSMP would be required to comply with the applicable air quality mitigation measures TSMM 4.B-2.A through 4.B-2.H as listed above. Construction sites associated with the proposed Mobility Element Update would be spread throughout the area and would occur over a span of several years. As a result, multiple construction projects are not likely to simultaneously impact the same local sensitive receptors. Therefore, construction TAC impacts would be considered less than significant.

Implementation of the Mobility Element Update would result in reduced VMT as compared to existing or future conditions. Under the Mobility Element Update, peak daily VMT would be reduced from 152,844 miles to 149,444 miles under existing development conditions. Under future General Plan conditions, the Mobility Element Update would reduce peak daily VMT from 179,233 miles to 173,695 miles. Therefore, operational mobile source TACs would generally be reduced and impacts from implementation of the Mobility Element Update would be less than significant.

Similarly, implementation of the Mobility Element Update would be expected to reduce overall CO concentrations from vehicle emissions. While some roadway intersections may see an incremental increase in traffic volumes, compared to existing conditions or existing General Plan buildout conditions, the effect on CO hotspot concentrations would be minor and would not result in exceedances of the standards. Therefore,

[32] *LSC Transportation Consultants, Inc., Mammoth Mobility Element Transportation Impact Analysis, (2016).*

operational CO hotspot impacts from implementation of the Mobility Element Update would be less than significant.

### Mitigation Measures

Implementation of GPMM 4.2-1 and GPMM 4.2-2 and compliance with Mitigation Measures AIR-1 through AIR-3 would reduce construction and operational emissions. The following mitigation measure is recommended:

**MM AIR-4:** Prior to the issuance of a grading or building permit, individual proposed projects shall comply with the following mitigation measures to reduce TAC impacts:

- Projects locating sources of TAC emissions near sensitive receptors within the advisory guideline recommendations in the CARB *Air Quality and Land Use Handbook* (or future adopted subsequent document) shall conduct a screening or refined health risk assessment to sufficiently demonstrate that impacts would not exceed the adopted significance thresholds inclusive of project-level design features, as appropriate and feasible.
- Projects requiring the use of substantial numbers of diesel-fueled heavy-duty construction equipment within 500 feet of sensitive receptors shall conduct a screening or refined health risk assessment to sufficiently demonstrate that impacts would not exceed the adopted significance thresholds inclusive of project-level design features, as appropriate and feasible.

## 4. CUMULATIVE IMPACTS

The air quality analyses included in this section evaluates the future development scenario as a whole, with development permitted by the proposed Land Use Element/Zoning Code Amendments and Mobility Element Update. Therefore, analysis of air quality from implementation of the proposed Land Use Element/Zoning Code Amendments and Mobility Element Update represents both the project impacts and cumulative effects. As a result of adding the proposed Land Use Element/Zoning Code Amendments and Mobility Element Update to the regional land use and transportation baseline, the associated air emissions produced under proposed Land Use Element/Zoning Code Amendments and Mobility Element Update are considered identical to the cumulative condition for CEQA purposes.

## a. Construction

The GBUAPCD does not have numerical thresholds to determine whether the Project would result in a cumulatively considerable net increase of $PM_{10}$ or ozone precursors. However, as discussed above, $O_3$ impacts are primarily the result of pollution generated in the San Joaquin Valley. The Town does not have control over the timing or sequencing of the related projects. Therefore, any quantitative analysis to ascertain daily construction emissions that assumes multiple and concurrent construction projects would be highly speculative.

With respect to the project's construction-period air quality emissions and cumulative Basin-wide conditions, the GBUAPCD has developed strategies to reduce criteria pollutant emissions pursuant to Clean Air Act mandates. Accordingly, the project and the related projects would comply with GBAUPCD Rule 200-

A, 200-B, Rules 401 and 402, and implement all feasible mitigation measures including TSMM 4.B-2.A through 4.B-2.H, as applicable. In addition, the project and related projects would comply with adopted AQMP emissions control measures. Nonetheless, as discussed previously, even with compliance of these rules and regulations, as well as with Mitigation Measures AIR-1 and AIR-2, construction of land uses permitted by the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network would have the potential to contribute substantially to an existing or projected air quality violation of the State standards. As a result construction impacts would be considered potentially cumulatively considerable and impacts would be significant and unavoidable.

## b. Operation

The GBUAPCD's approach for assessing cumulative impacts related to operations is based on the attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or State non-attainment pollutant. Because the Basin is currently in nonattainment for the State ozone and $PM_{10}$ standards, related projects could exceed an air quality standard or contribute to an existing or projected air quality exceedance. Cumulative impacts to air quality are evaluated under two sets of thresholds for CEQA. In particular, CEQA Guidelines Sections 15064(h)(3) provide guidance in determining the significance of cumulative impacts. Specifically, Section 15064(h)(3) states in part that:

> *A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency…*

For purposes of the cumulative air quality analysis with respect to CEQA Guidelines Section 15064(h)(3), the project's incremental contribution to cumulative air quality impacts is determined based on compliance with the Town of Mammoth Lakes AQMP.

A project is deemed inconsistent with air quality plans if it results in population and/or employment growth that exceeds growth estimates in the applicable air quality plan. The AQMP relies upon growth projections adopted by the General Plan. Consequently, implementation of DF 4.2-1 and DF 4.2-2 would result in compliance with the AQMP. Because traffic generated by the Project with implementation of DF 4.2-1 and DF 4.2-2 would not exceed the Town's VMT cap, the Project would not conflict with or obstruct implementation of the applicable air quality plan under the AQMP.

Nonetheless, as shown previously in Table 4.2-5 and Table 4.2-6, the incremental change in emissions of $PM_{10}$ would exceed the numeric daily emission thresholds. Therefore, development under the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network would potentially result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment (i.e., $PM_{10}$)

under the State standards. Even with compliance with applicable regulations, as well as implementation of DF 4.2-1 and DF 4.2-2 and Mitigation Measure AIR-3, operational impacts would be considered potentially cumulatively considerable and impacts would be significant and unavoidable.

## 5. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Compliance with GPMM 4.2-1 and GPMM 4.2-2 would reduce potentially significant AQMP impacts associated with implementation of the Land Use Element/Zoning Code Update to a less than significant level. Implementation of GPMM 4.2-1 and GPMM 4.2-2, TSMM 4.B-2.A through 4.B-2.H, and compliance with the prescribed Mitigation Measure AIR-1 through AIR-3 would reduce Project and cumulative construction and operational $PM_{10}$ and $PM_{2.5}$ emissions related to the Land Use Element/Zoning Code Amendments or the combined Land Use Element/Zoning Code Amendments and Mobility Element Update; however, even with implementation of the recommended mitigation measures, Project and cumulative construction and operation of the combined Land Use Element/Zoning Code Amendments and Mobility Element Update or the Land Use Element/Zoning Code Amendments under the existing roadway network could potentially contribute substantially to an existing or projected air quality violation or result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment (i.e., $PM_{10}$) under the State standards and impacts would be significant and unavoidable. CO hotspot impacts would be less than significant and no mitigation would be required. Compliance with Mitigation Measure AIR-4 would ensure that potential Project and cumulative TAC impacts would be less than significant.